Case Study

Insist On Orange | TRAFALGAR FIRE

Sydney Opera House, Concert Hall Upgrade - Smoke Extraction Duct Protection

Project Overview

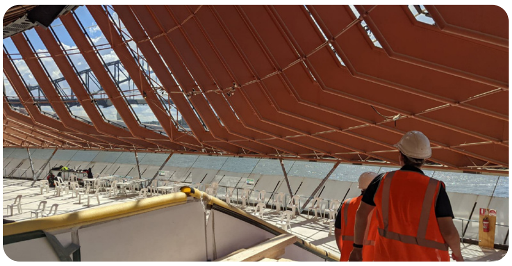
In 2022, Australia's famous Sydney Opera House completed a major upgrade of its Concert Hall. The works focused on improving the acoustic performance and updating key technology throughout the space. As part of the upgrade, the smoke extraction system hidden inside the building's sails also needed a full fire-safety upgrade. This involved protecting large sections of ductwork that sit high above the hall and run through tight, hard-to-reach areas of the structure.

Project	Sydney Opera House Trust
Builder	Taylor
Contractor	Out There Constructions
System Used	FyreWrap Elite 1.5
Completion Date	August, 2022
Application	Smoke Extraction Duct Protection

Challenges

The project came with several on-site challenges:

- Some of the smoke extraction ducts were extremely large, reaching up to 3 metres wide, which made fire protection more complex.
- Access inside the top sails was very limited, with narrow walkways and irregular shapes to work around.
- Multiple trades were active in the same areas, meaning installation needed to be coordinated carefully to avoid delays or damage to the building's delicate finishes.
- As a heritage site, all work had to be carried out with extra care to protect the structure.



The Trafalgar Approach

Understanding these challenges, our team provided a passive fire approach that suited the unique layout of the ductwork and the limited access in the sails:

- **Site Visits and Collaboration:** Trafalgar Fire provided support at every stage—visiting site before installation, during the works, and even afterward—to ensure the FyreWrap was installed correctly and to walk the contractor through all requirements.
- **Project Specific Solution:** Our engineers reviewed the size, shape and location of the smoke extraction ducts and confirmed how FyreWrap® Elite 1.5 could be installed safely without adding unnecessary weight or affecting nearby structures. This project-specific approach ensured the fire protection system met the required FRL, aligned with heritage requirements, and could be installed efficiently while other trades were active in the space.
- **Minimising Impact on the Building:** All fire protection work was planned to avoid damage to the Opera House's delicate finishes, preserving the integrity of the historic building.

The Solution

FyreWrap® Elite 1.5 was selected for the project because it provided the required fire performance while remaining lightweight and flexible — important for the large duct sizes and tight spaces inside the sails. The wrap allowed the team to achieve a high FRL without adding unnecessary bulk or weight to the ductwork. Its easy-to-handle nature meant installers could work more safely and efficiently in the constrained environment.

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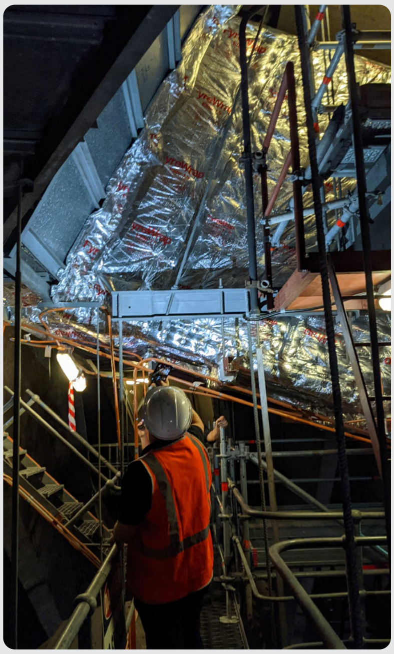

Lightweight Protection

The wrap allowed the team to achieve a high FRL without adding unnecessary bulk or weight to the ductwork.

Clean & Easy Install

No Mesh Required

FyreWrap® Elite 1.5 was installed neatly around the large duct sections without any mesh or heavy framing. Its lightweight design made it easy to fit in the tight sail spaces, allowing quick, clean installation without affecting nearby trades or the building's structure.